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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,671	10/23/2003	Donald E. Tilton	ISOT-020	9611

7590 06/14/2005

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EXAMINER

LE, THANH TAM T

ART UNIT	PAPER NUMBER
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2839

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/693,671	Applicant(s) TILTON ET AL	
	Examiner Thanh-Tam T. Le	Art Unit 2839	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 11-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 11-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1-4, 11-28 are objected to because of the following informalities:

Claim 1, line 6, claim 2, line 3, claim 11, line 3, claim 12, line 3, claim 15, line 2, claim 18, line 3 and claim 19, line 7, "at least one electronic device" should be -- said at least one electronic device --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 11-21 and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Wall et al. (6,054,676).

Regarding claims 1 and 25, Wall et al., figures 2 and 6, disclose a thermal management socket system comprising :

- a thermal management unit having a chamber (38 and 48), which is capable of receiving at least one electronic device (42);
- a plurality of first connectors (34) within the chamber may be electrically coupled with a corresponding plurality of device connectors (43) of the at least one electronic device; and

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- a plurality of second connectors (36) extending from the thermal management unit, wherein the second connectors are electrically coupled to the first connectors and may be removably and electrically coupled to a socket (a hole of an annular metal gusset (93)) on a board (26).

Regarding claims 11 and 12, the first connectors are each comprising of a receptacle structure capable of receiving a corresponding device connector from the electronic device and comprising a raised structure capable of electrically coupling with the electronic device utilizing a land grid array.

Regarding claim 13, the thermal management unit comprising a base portion (37) containing the first connectors and the second connectors, and a cap member (45) removably connectable to the base portion for defining the chamber.

Regarding claims 14-21 and 23-24, the features in the method claims are identical to those in the apparatus claims. Therefore, the method of utilizing a thermal management unit alone is not a patentable feature.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4, 22 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over wall et al. (6,054,676).

Wall et al. disclose a cold plate (56) and instant claimed invention as described above except for a liquid thermal management system comprising spray cooling and liquid immersion.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Wall et al. to have the liquid thermal management system comprising spray cooling and liquid immersion, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416, for better cooling.

Response to Arguments

6. Applicant's arguments filed 3/25/05 have been fully considered but they are not persuasive.

In page 12, last paragraph, the Applicant states Wall does not teach a thermal unit having " a plurality of first connectors within the chamber, wherein the first connectors may be electrically coupled with a corresponding plurality of device connectors of at least one electronic device." The Examiner disagrees. Figure 4a and column 5, lines 60-63 disclose the above limitations.

In page 13, the Applicant states Wall does not teach a thermal unit management unit having " a plurality of second connectors extending from the thermal management unit, wherein the second connectors are electrically coupled to the first connectors and

wherein the second connectors may be removably and electrically coupled to a socket on a board". The Examiner disagrees. That limitations are disclosed on the rejection above and the second connectors (36) may be removably (remove together with the first connectors 34).

For the above reasons, it is believed that the rejections should be sustained.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

8. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh-Tam T. Le whose telephone number is 571-272-2094. The examiner can normally be reached on 7:30-5:00.

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10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TC Patel can be reached on 571-272-2098. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thanh-Tam T. Le
Primary Examiner
Art Unit 2839

TL
06/13/05